

Patent Claims

1. Method of forming a conductive pattern on dielectric substrates, in which method

5 a) a substrate covered with a metal film is coated with a protective layer which is formed by treating the metal film with a solution containing at least one compound containing nitrogen,

10 b) the protective layer is stripped away by UV radiation at least partially in the regions not corresponding to the conductive pattern to be formed, in such a way that the metal film is exposed and

c) the exposed metal film is removed by etching.

15 2. Method according to claim 1, **characterised in that** the conductive pattern is formed on a substrate covered with a copper layer.

3. Method according to one of the preceding claims, **characterised in that** laser radiation is used as the UV radiation.

20 4. Method according to one of the preceding claims, **characterised in that** the protective layer is removed, using a pulsed excimer laser, in the metal film regions to be exposed in method step b).

25 5. Method according to one of the preceding claims, **characterised in that** a mask through which UV radiation passes is used to copy the conductive pattern onto the substrate covered with the metal film.

6. Method according to one of the preceding claims, **characterised in that** the compounds containing nitrogen are selected from the group of compounds, comprising

the following substituted with alkyl, aryl and/or aralkyl groups: imidazoles, benzimidazoles, triazoles, benzotriazoles, pyrroles, pyrazoles, oxazoles, isoxazoles, thiazoles, benzothiazoles, indoles, adenine, purine, quinolines, pyrazines, quinazolines, guanine, xanthine, hypoxanthine, indazoles, creatinine, phenazines, cupferron, tetrazoles, thiadiazoles, thiatriazoles, isothiazoles as well as derivatives of same, the alkyl groups having at least three carbon atoms.

7. Method according to one of claims 1 to 5, **characterised in that** the compounds containing nitrogen contain oligomer or polymer chains to which compounds are linked which are selected from the group of compounds comprising the following substituted with alkyl, aryl, and/or aralkyl groups: imidazoles, benzimidazoles, triazoles, benzotriazoles, pyrroles, pyrazoles, oxazoles, isoxazoles, thiazoles, benzothiazoles, indoles, adenine, purine, quinolines, pyrazines, quinazolines, guanine, xanthine, hypoxanthine, indazoles, creatinine, phenazines, cupferron, tetrazoles, thiadiazoles, thiatriazoles, isothiazoles as well as derivatives of same, the alkyl groups having at least three carbon atoms.

8. Method according to one of the preceding claims, **characterised in that** the protective layer is formed by bringing the metal layers into contact with an aqueous acid solution of the compound containing at least one nitrogen.

9. Method according to one of the preceding claims, **characterised in that** the solution to form the protective layer contains at least one acid selected from the group comprising phosphoric acid, sulphuric acid, hydrochloric acid, phosphorous acid, formic acid, ethanoic acid, glycolic acid, oxalic acid, succinic

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acid, maleic acid, tartaric acid, adipic acid and lactic acid.

10. Method according to one of the preceding claims, **characterised in that** the protective layers is formed
5 by an electrochemical reaction, in that, as the metal layers are brought into contact with the solution which contains the compounds containing nitrogen, an electric voltage is applied at least intermittently between the
10 metal layers and electrodes brought into contact with the solution, or arises as a result of the standard potential difference of the metal layers and the electrodes in such a way that the metal layers are polarised as the anode and the electrode as the cathode, such that an electrical current flows between
15 the metal layers and the electrodes.

11. Method according to one of the preceding claims, **characterised in that** the exposed metal film is removed with an alkaline metal etching solution.

12. Method according to one of the preceding claims, **characterised in that** a horizontal continuous process
20 is used to form the protective layer and remove the exposed metal layers.

13. Method according to one of the preceding claims, **characterised in that** the protective layer is stripped
25 away after the metal film has been removed.